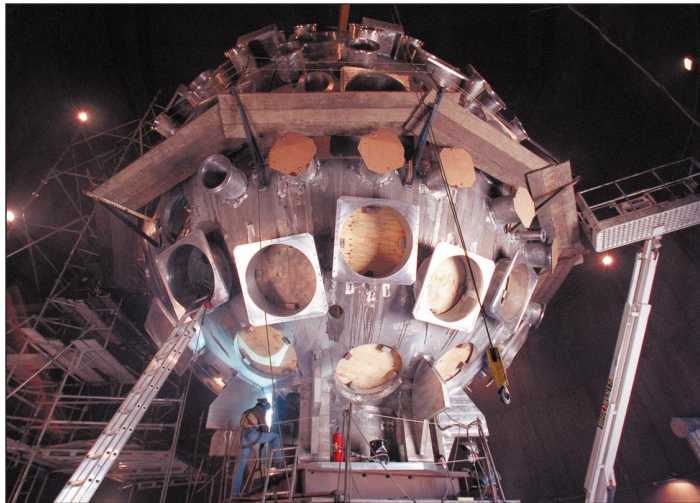
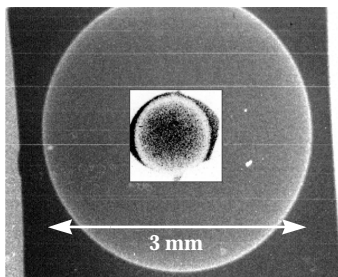


**NIF Target Chamber Preparing for Move.** The National Ignition Facility (NIF) target chamber, scheduled to be moved from its assembly enclosure to the target area of the main facility building in June, is nearly complete. The 192 holes are being fitted with flanges that will allow the installation of the final optics assemblies and target diagnostics. The completion and movement of the target chamber are a major milestone in the NIF Project.



These flanges around the target chamber holes will allow the final optics assemblies and target diagnostics to be installed.

**New Radiography Technique for NIF.** Taking radiographic images during an ICF experiment is an important diagnostic capability. Previous multi-keV radiographic techniques have used either point-projection imaging from a fiber source or a pinhole image from a large-area source. A new point-projection x-ray radiography technique employing backlit pinholes combines the best features of both methods. The technique was recently used to back-light imploding shells in NIF-scale hohlraums. The figure

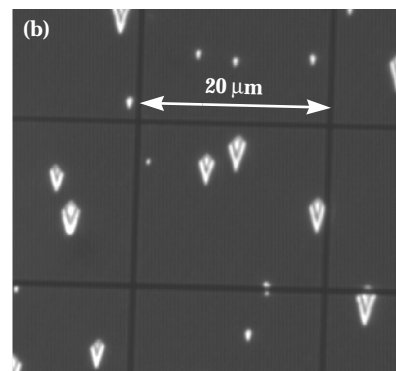
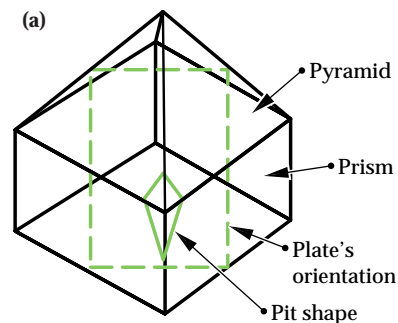


The backlit-pinhole radiograph offers better signal-to-noise ratio than a traditional, area-backlit radiograph (inset).

to the left compares a 4.7-kV radiograph recorded by a backlit pinhole with a radiograph recorded using the traditional technique of area backlighting shown in the inset. NIF radiographic experiments that would have required up to 100 NIF beams to produce an area backlighter will now be feasible using just a single NIF backlighter beam per image.

### KDP Scatter.

Recent experiments clarified the formation mechanism of scattering defects observed in Beamlet frequency-conversion crystals and demonstrated that the defects do not occur in dry air. Ambient moisture is absorbed by the porous coating, which dissolves the potassium dihydrogen phosphate (KDP) and wicks it into the coating. The resulting etch pits in the crystal surface are characteristic of the orientation the plate is cut from the crystal, as shown in the figure. We have found that etch-pit formation is slowed substantially by annealing the crystal after final finishing.



(a) Etch-pit defects share the orientation of the plate to be cut from the crystal.  
(b) Photo of etch pits in a KDP frequency-doubling crystal.

### National Workshop Addresses Direct Drive on NIF.

Fusion ignition by inertial confinement can be achieved both by indirect and direct drive (i.e., by direct laser illumination of a deuterium-tritium target). While NIF will begin operations in indirect-drive mode, its target bay is designed to accommodate reconfiguration to direct-drive mode. A workshop was held at Lawrence Livermore National Laboratory on April 9 with the University of Rochester's Laboratory for Laser Energetics and the Naval Research Laboratory (the two main U.S. centers for research on direct drive) and General Atomics. A schedule was proposed for early planar drive experiments and the facility reconfiguration following the indirect-drive ignition campaign. Action teams were formed to address detailed issues for subsequent meetings. For more information, contact NIF Mission Support at [vanwongerghem1@llnl.gov](mailto:vanwongerghem1@llnl.gov).